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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/809,004	03/25/2004	Shoupu Chen	87976SLP	7773
76523	7590	02/22/2008		
Carestream Health Inc, 150 Verona Street Rochester, NY 14608			EXAMINER LAMPRECHT, JOEL	
			ART UNIT 3737	PAPER NUMBER
			MAIL DATE 02/22/2008	DELIVERY MODE PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

### Office Action Summary

**Application No.**

10/809,004

**Applicant(s)**

CHEN ET AL.

**Examiner**

Joel M. Lamprecht

**Art Unit**

3737

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 08 November 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-29 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-29 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/CDC)
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date: \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_
- Paper No(s)/Mail Date: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Objections***

Claims 2-10, 12-14, 16, 20 and 21 are objected to because of the following informalities: In claim 2, the step of adjusting exposure of the in vivo images cannot contain the step of "adjusting image exposure" as it is unclear what additional step is being set forth in the method. Regarding claims 4 and 20, "the crease feature" and "the threshold image" lack antecedent basis. Regarding claims 5 and 21 "the crease feature" lacks antecedent basis. Regarding claim 6 "mask B" lacks antecedent basis. Regarding claim 12, the claim as written fails to set forth a step of identifying abnormalities in the images. Regarding claims 14 and 16, the claims fail to set forth any additional steps in the method as they only define structural limitations.

Appropriate correction is required.

### ***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation

under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Le (US 6,608,942) in view of Yokoi et al (US 2003/0023150 A1) and in further view of Ravkin (US 6,259,807 B1). Le discloses a digital image processing method comprising acquiring image data (Col 2 Lines 5-40), detecting discontinuities (Col 2 Line 12-55), preserving them (Col 9 Line 29-62), and adjusting the exposure of the image with the discontinuity preserved (Col 12 Line 55 – Col 13 Line 60), including thresholding the images (Col 12 Line 35-60), forming multiple masks from a thresholded image (Col 14 Line 10-65), and adjusting the properties (Col 15 Line 45 – Col 16 Line 42), including intensity and contrast via those masks (Col 16 Line 49 – Col 17 Line 48). The development of those adjustments includes the creation of a smoothing band across a boundary (Col 17 Line 48 – Col 18 Line 65), and using gradients for color components to perform morphological filtering operations (Col 12 Line 17 – Col 13 Line 67). Additionally, Le uses masking alongside of filters to remove or preserve discontinuities from the images selectively (Col 14 Line 15-24), selectively intensify regions of the image based on threshold intensities on a scale (Col 16 Line 28 – Col 17 Line 25), and smoothing based on a selective width around a boundary line where intensity, and gradients thereof, provide a basis for smoothing (Col 8 Line 25 – Col 10 Line 20). Furthermore, the disclosure of Le provides a notification of a discontinuity to a remote

site (Col 6 Line 40 – Col 7 Line 25), and an examination bundle processing system for transmitting data from the processed images to an external source or to a display means (Col 7 line 10-25).

Le does not disclose the acquisition of images from an in vivo camera system, or a wireless communication link between the image processing system and the in vivo camera system coupled to a Personal Digital Device or provide a specific step-by-step mask generation and modification in such simple terms. Attention is then paid to the secondary reference by Yokoi et al, which discloses a method for acquiring in vivo image data (0062), wirelessly transferring that data to a personal digital device and then to a computer for processing (0073). Additionally, attention is directed to Ravkin ('807) which explicitly describes and defines a masking method which uses threshold image adjustments, multiple mask formations and adjusting image brightness values with the masks used (Col 11 line 65- Col 13 Line 10, Col 8 Line 10-55, Claims 13-17). It would have been obvious to one of ordinary skill in the image processing and medical image diagnosis field to have incorporated the in vivo image acquisition system of Yokoi et al, and the specific outline of mask formation and adjustment of Ravkin with the image processing system of Le to allow for the analysis and processing of image data acquired internally of a patient's condition.

### ***Response to Arguments***

Applicant's arguments filed 11/08/07 have been fully considered but they are not persuasive. Applicant cites a definition from Kodak Company's Glossary of

Photographic Terms, but fails to recognize that within the claims "adjusting exposure of in vivo images includes steps d1-d5 of claim 2. Therefore by providing for those steps of thresholding, forming multiple masks and adjusting image statistics with the masks, the cited references adjust image exposure. With regard to the arguments about dependent claim 2, Ravkin discloses a specific method using multiple masks to adjust image statistics and Ravkin forms skeleton images via opening and overlapping erosions in Col 11 line 65- Col 13 Line 10.

### ***Conclusion***

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Joel M. Lamprecht whose telephone number is (571) 272-3250. The examiner can normally be reached on Monday-Friday 7:30AM-4PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian L. Casler can be reached on (571)272-4956. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

JML

/Ruth S. Smith/  
Primary Examiner, Art Unit 3737